Syllabus

STAT 419/519

Statistical Inference

Credits: 3

Prerequisites: (MATH 354 OR MATH 355 OR CAAM 334 OR CAAM 335) AND STAT 418

Meeting dates and times

Dates: Tuesday, Thursday

Times: 2.30–3.45

Instructor

Name: Dr. Michael Schweinberger

Office: Duncan Hall 2058

Office hours: By appointment

Email: michael.schweinberger@rice.edu

Teaching assistant

Name: TBA

Email: TBA

Course objectives and outcomes

The course aims to provide students with some of the most basic but most important tools of modern statistical inference.

Course book

G. Casella and R. L. Berger. Statistical Inference. Second edition. Duxbury.

Course contents

Topics taken from the course book:

- Principles of data reduction.
- Point estimation.
- Hypothesis testing.
- Interval estimation.
- Bayesian inference.
- Analysis of variance and regression.

Other topics that are important in modern statistical inference but are not well-covered by the course book:

- M-estimators.
- Finite-sample concentration-of-measure and consistency results based on concentration inequalities (e.g., Bernstein inequalities, Chernoff bounds, Gaussian concentration, Subgaussian concentration).
- ...

Grades

- Homeworks: 20%
- Midterm, March 5: 40% (in class, closed book, two pages of notes)
- Final: date announced by Registrar: 40% (in class, open book)

Homeworks must be submitted at the beginning of the class on the due date. Late homeworks will be accepted, but the grades of late homeworks are discounted by factor 0.5 every 12 hours.

The dates of the midterms will be announced in class. STAT 519 students will have additional homework and exam questions.

Attendance

Attendance of classes is not required, but recommended.

Honor Code

The course is governed by the Honor Code of Rice University.

Disabilities

If you have a documented disability that will impact your work in class, contact the instructor. In addition, you need to be registered with Disability Support Services Office in the Allen Center. The policy of Rice University regarding disabilities are observed: see http://ga.rice.edu/.

Other policies

All other policies of Rice University are observed: see http://ga.rice.edu/.